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COMPLETE SPECIFICATION

A Portable Safety Case for the Conveyance of Valuables

I, ROGER TOUYET, a French citizen of Arzacq, Basses-Pyrénées, France, do hereby declare the invention for which I pray that a patent may be granted to me and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a portable safety case for the conveyance of valuables such as paper securities, bank-notes or the like and is concerned with a generally improved case of this kind.

It is already known to provide such cases with means for indelibly marking conveyed bank-notes when stolen, so as to prevent use of the stolen bank-notes with impunity. However, in use such known cases often do not effectively mark all the bank-notes conveyed therein.

It is an object of the present invention to provide a portable safety case of improved effectiveness.

Accordingly the present invention provides a portable safety case for the conveyance of valuables such as paper securities, bank-notes or the like, said case including at least one compartment containing a rack for locating valuables to be conveyed, at least one further compartment for containing marking fluid having a corrosive or dye action on said valuables, controllable transfer channel means for interconnecting said compartments and energy storing means operable *via* a control mechanism to eject said fluid under pressure through said controllable transfer channel means and into said rack compartment in a manner such that ejected fluid will flow at least partially over substantially all said valuables.

For a better understanding of the present invention, and to show how the same may

be carried into effect, reference will now be made by way of example to the accompanying drawings wherein:—

Figure 1 is a partially sectioned side view of a first embodiment of a portable safety case according to the invention,

Figure 2 is a diagrammatic detail side view of a first modification to the first embodiment of Figure 1,

Figure 3 is a partially sectioned diagrammatic detail side view of a second modification to the first embodiment of Figure 1,

Figure 4 is a partially sectioned side view of a modified detail of Figure 1 to an enlarged scale,

Figure 5 is a partially sectioned diagrammatic detail side view of a third modification of the first embodiment of Figure 1,

Figure 6 is a partially sectioned side view of a second embodiment of the invention,

Figure 7 is an end view of a rack adapted to carry currency notes in association with a container for marking fluid as incorporated with the second embodiment of Figure 6,

Figure 8 is an end view of a detail of the embodiment of Figure 6,

Figure 9 is a partially sectioned diagrammatic side view of a first modification of the second embodiment of Figure 6,

Figure 10 is a perspective view of inner parts of a second modification to the embodiment of Figure 6, and

Figure 11 is a perspective view, on a larger scale, of the control mechanism for the modified embodiment of Figure 10.

Referring now to Figure 1, a first embodiment of a portable safety case 1 of the invention for the conveyance of valuables such as paper securities, bank-notes or the like, has a pivotable cover 2 provided with a handle 3 for carrying purposes. The upper

section of the case 1 forms a compartment containing at least one rack 8 which is intended to receive the valuable to be conveyed. The lower section of the case 1 forms a further compartment for containing marking fluid having a corrosive or dye action on the valuables conveyed. The marking fluid is conveniently carried in containers 4 which are arranged below the racks 8. Controllable transfer channel means is provided for interconnecting the compartments for the transfer of marking fluid. Such channel means includes on each container 4, a central outlet pipe 5 outwardly and upwardly flared as at 6 from a throttled section and a stopper 7 arranged to fit in a fluid tight manner in the throttled pipe section. The channel means also includes perforations 9 formed in the bottom of the racks 8.

Figure 2 illustrates a modification wherein the containers 4 are arranged above the racks 8 whereas, in the modification illustrated in the case of Figure 3, the containers 4 and the racks 8 are arranged side by side. In the case of the first embodiment according to Figure 1 and its modification illustrated in Figure 2, each container 4 is closed as aforesaid by a stopper 7, or else by a valve or like closing means while in Figure 3 only pipes 23' open into the racks 8 from the containers 4.

In the embodiment and modifications illustrated in Figures 1 to 5, the portable safety case includes energy-storing means including a chamber 10 carrying a pressure medium such as a compressed or liquefied gas such as carbonic gas for ejecting the marking fluid under pressure through the channel means into the racks 8. The chamber 10 may be housed within the handle 3 of the case 1 and is provided with a nozzle 11 carrying an inner valve. As is readily apparent from inspection of Figure 4, the chamber 10 is urged by a spring 12, compressed by means of a screw cap 14, against a tubular member 15 provided with an outer peripheral flange 16. The energy storing means is operable via a control mechanism. To this end the flange 16 abuts against an end of a pivoting lever 17 forming part of the control mechanism the other end of which lever carries a control push-button 18 projecting above the upper surface of the handle 3. In one of the vertical sections of the handle 3, there is fitted a rigid pipe 19 provided with a hollow end-piece 20 adapted to engage the nozzle 11 of the chamber 10, said end-piece 20 carrying a fluidtight packing 21 adapted to ensure a fluidtight connection between the chamber 10 and the pipe 19. The pipe 19 is connected at its end opposed to the chamber 10 with a distribution case 22 inside which the fluid can expand. Said case 22 is connected in turn through pipes

23 with each of the containers 4 (Figs. 1, 2 and 3).

Fig. 5 illustrates a modification to the first embodiment employing a container 24 of a collapsible or yielding nature. The container 24 is adapted to carry the marking fluid and is provided with a neck 25 closed by a stopper 26. The container 24 is fitted between a lower plate 27 and an upper plate 28. The lower plate 27 is stationary and is provided with a perforation 29 for the passage of the neck 25. The upper plate 28 is secured to the lower end of a rod 30 the upper end of which is rigid with a piston 31 carried inside a corresponding cylinder 32. The cylinder 32 communicates through a pipe 33 with a distribution case 34 in which the pressurising medium can expand and which is connected with the nozzle 11 of the chamber 10 filled with the compressed pressurising medium. The case 34 is equipped with a conventional control mechanism adapted, when subjected to the action of a control push-button 35, to release the pressurising medium under pressure, which is contained inside the chamber 10 and thereby ensure the admission of said medium into the cylinder 32 through the pipe 33.

Figs. 6, 7 and 8 illustrate a second embodiment of the portable safety case of the invention. In the second embodiment the case 1 is also equipped with a handle 3 for conveyance. Inside the case 1, and in the lower section of the latter, is arranged a container 36 carrying the marking fluid. The upper open end of the container 36 is closed by a breakable diaphragm 37 adapted to be torn open.

Inside the case 1 and above the container 36, is located a rack 38 which is to carry the valuables such as bank-notes to be conveyed. The rack 38 may for instance be given the general shape of a rectangular parallelepiped. The bottom of the rack 38 is perforated as shown at 39 and carries sharp teeth 48 projecting downwardly. Each lateral vertical wall of the rack 38 is provided with a vertical groove 41 having for instance a semi-circular cross-section. In each vertical groove 41 are fitted ball bearings 42. Each groove 41 encloses a vertical guiding member 43 incorporated with the adjacent vertical wall of the outer casing 1. The balls forming part of the bearings 42 are urged against the end surfaces of the corresponding guiding members 43. Thus, the rack 38 is fitted in the case 1 so as to be capable of sliding vertically inside the latter. The upper end of the rack 38 is rigidly secured to two vertical rods 44 and 45. Each of the rods 44 and 45 is fitted inside a housing formed in the corresponding vertical section of the handle 3. One of the rods, say the rod 44, is longer than the other so as to

project above the upper surface of the handle 3 and is provided with a transverse bore 46 which serves for the insertion of a release pin 47 adapted to be torn out and which engages the upper surface of the handle 3 so as to prevent the rod 44 and consequently the rack 38 from sliding downwardly inside the case 1.

The release pin 47 is carried by one end of a connecting member 48, constituted for instance by a chain. The other end of the connecting member 48 engages for instance a wrist-band which may be fitted round the arm of the person carrying the case. Before inserting the rods 44 and 45 inside the corresponding housings, it is necessary to fit coil springs 49 and 50 round them, said springs being compressed between the upper walls of the casing 1 on the one hand and of the rack 38 on the other hand when the rods 44 and 45 of said rack are urged into the corresponding housings formed in the vertical sections of the handle 3.

According to this latter modification, the springs 49 and 50 form part of the energy-storing means and the pin 47 forms the control member adapted to release the operation of said energy-storing means.

The rack 38 includes perforated sidewalls or else sidewalls constituted by a grid for instance. The rack 38 is provided with doors 51 in one of its vertical longitudinal surfaces.

In the modification of the second embodiment illustrated in Fig. 9, the portable safety case 1 of the invention also includes a handle 3 for its conveyance. Inside the case 1 and at the bottom of the latter is arranged a container 52 of which the upper wall includes a breakable diaphragm or sheet of yielding material which may be torn open. The container 52 carries the indelible marking fluid. Inside the case 1 and above the container 52 is fitted a rack 53 adapted to carry the valuables to be conveyed, said rack 53 being constituted in a manner similar to the rack 38 of the second embodiment. The upper wall of the rack 53 is rigid with rods 54 and 55. Said rods 54 and 55 are held in corresponding housings formed in the vertical sections of the handle 3 by a release pin adapted to be torn out, and which is connected by a yielding connecting member with the wrist of the person carrying the casing, said pin extending through one of the vertical sections of the handle and the corresponding rod 54 or 55.

As precedingly, perforations are provided in the bottom of the rack 53 and possibly in the walls of the latter. The bottom of the rack 53 carries toothed blades 57. In this modification, the energy-storing means is constituted by elastic connecting members such as 56 secured to the bottom of the case at one end while their other end engages

the upper section of the rack 53 so as to urge the container and rack towards each other. The vertical side walls of the rack 53 engage for instance rollers fitted on the inner corresponding surfaces of the case 1.

Generally speaking, the members guiding the vertical sliding movement of the rack may be constituted by slideways of any type whatever.

Fig. 10 illustrates the inner parts of a still further modification of the second embodiment. These inner parts include chiefly a rack 60 for the valuables such as banknotes and a container 61 carrying the marking fluid. The rack 60 is provided with lateral doors 62 and 63 and with a latch mechanism 64 for the mutual locking of said doors. To the bottom of the rack 60 are secured blades 65 having sharp downwardly projecting teeth. The upper wall of the rack 60 is rigid with an outer beam 66 to which is secured a vertical projecting pin 67 having an expanded head 68. The upper wall 69 of the container 61 is formed by a thin sheet of yielding material adapted to be torn open.

A cylindrical bar 70 the ends of which have a larger diameter, is held with reference to the opposite side walls of the case by means of elastic connecting members 71 forming a loop and adapted to enter selectively two positions. For its inoperative position, illustrated in solid lines in Fig. 10, the bar 70 lies between the rack 60 and the container 61 so as to prevent any shifting of the rack 60 with reference to the container 61. When the cylindrical bar is in its operative position, illustrated in dot and dash lines in Fig. 10, the bar 70 extends over the upper wall of the rack 60 and, for this position, the elastic connecting members 71 are energetically tensioned while the rack 60 is held away from the container 61 by the mechanism illustrated in Fig. 11.

Said retaining mechanism includes two jaw parts 72 and 73 pivotally secured together at 74 and secured to a casing enclosing the arrangement at this pivotal point. Each of the jaw parts 72 and 73 has a semi-circular notch, 75 and 76 respectively, said notches registering with each other. Each part 72 and 73 includes also a vertical flange extending towards the end remote from the pivotal point 74 so as to form pusher members, 77 and 78 respectively. Between these vertical flanges, a coil spring 79 extending over the parts 72 and 73, is compressed. A locking member constituted by an elastic blade 80 notched at 81, engages with the outer edges of its notch, the vertical flanges of the parts 72 and 73, which ensures the maintenance of the spring 79 under compression. A control or release member 82, in the shape of a hook, engages the notch 81 and a traction exerted on said hook-shaped member raises the upper part of the locking member 80, releasing the jaw

parts 72 and 73 from the notch 81 and consequently leading to a sudden shifting apart of the parts 72 and 73 under the action of the expanding spring 79. In this spaced apart position of the parts 72 and 73, the head 68 of the pin 67 on the rack 60 can move through the gap formed between the two co-operating notches 75 and 76. The movement of the jaw parts 72 and 73 towards each other, as provided by the operation of the pusher-members 77 and 78, closes the notches 75 and 76 over the pin 67 underneath the head 68 of the latter, so that the rack 60 is held then in its uppermost position inside the case. The locking of the parts 72 and 73 in the position in which they are nearest each other is ensured by the locking member 80. Traction exerted on the hook-shaped member 82 produces the release of the parts 72 and 73 and consequently of the rack 60.

The operation of the portable safety case of the invention is as follows:

In the case of the embodiment illustrated in Fig. 1, a pressure exerted downwardly on the control push button 18 (Fig. 4), produces a pivotal movement of the lever 17 and consequently a release of the tubular member 15. At such a moment and by reason of the expansion of the spring 12, the chamber carrying compressed gas is axially displaced until its nozzle 11 engages the co-operating end-piece 20 and the inner valve of the nozzle 11 is actuated by said end-piece 20. The pressurising medium or gas thus released enters the distribution case 22 through the agency of the rigid pipe 19 so that the case 22 distributes the gas under a suitable pressure into the containers 4, through the agency of the pipes 23. The containers 4 are thus put under pressure, internally, by means of the pressure medium, and the action of the pressure causes the stoppers 7 to be urged outwardly along the flaring sections 6 of the pipes 5. This results in the marking fluid being forced out of the containers 4 into the rack compartment and into the racks 8 through the perforations 9 in the bottom of said racks, and thereby ensures adequate impregnation of the bank-notes carried inside said racks.

In the modified embodiment illustrated in Fig. 2, downward actuation of the push button 18 produces a release of the compressed gas carried inside the chamber 10 and the subjection of the containers 4 to pressure through the agency of the gas fed into the case 22 and distributed by the latter under a suitable pressure into the containers 4. The stoppers 7 of the containers 4 are urged outwardly by the action of the pressure and the marking fluid is forced out of the containers 4 into the racks 8.

In the modification illustrated in Fig. 3, downward actuation of the push button 18

produces the subjection of the containers 4 to pressure, said containers being fed under a suitable pressure with the pressurising medium such as gas fed out of the chamber 10, via the case 22 and the pipes 23. The subjection of the containers 4 to pressure urges the marking fluid carried inside said containers into the racks 8 through the pipes 23. Said pipes 23 start from the bottom of the containers 4 and register with openings formed in the upper ends of the corresponding racks 8.

In the case of the modification illustrated in Fig. 5, downward actuation of the push button 35 starts the feeding of the compressed gas carried inside the chamber 10 into the cylinder 32, which leads to a shifting of the piston 31 and consequently to a crushing of the yielding container 24 between the plates 27 and 28. The stopper 26 is thus urged out of the container 24 and the marking fluid carried in the latter is forced into the rack carrying the valuables, which rack extends below said container 24.

In the second embodiment illustrated in Figs. 6 to 8, the tearing out of the release pin 47 releases the rack 38 which, under the action of the expansion of the springs 49 and 50, moves downwardly so that the sharp teeth 40 of the rack 38 tear the diaphragm 37. The rack then enters the container 36, and the marking fluid carried in the container 36 is thus subjected to pressure and forced on to the bank-notes 83 carried in the rack 38.

In the further modifications of the second embodiment illustrated in Figs. 9 10 and 11, the tearing out of the release pin 47 or the operation of the release member 82 causes the rack 53 or 60 to be downwardly displaced under the action of the traction exerted by the elastic connecting members, 56 or 71 according to the case, so that the teeth or blades 57 or 65 perforate the upper wall of the corresponding container, 52 or 61. The container 52 is crushed during the continued movement of the rack 53 while the rack 60 enters the container 61 after the diaphragm 69 has been torn. The marking fluid, carried inside the container 52 or 61 is thus set under pressure and forced out of the respective container by the rack to impregnate the bills and bank-notes carried in the rack 53 or 60.

With reference to the safety and conveying means for bills and notes which have been proposed hitherto, the improved portable safety case of the invention has the main advantage of ensuring that at the moment a theft is being attempted, substantially all the bills and notes which are being conveyed will be marked at least partially by the indelible marking fluid carried inside the containers 4, 36, 52 or 60. Furthermore with the case of the invention for normal

utilisation conditions, the bills and notes carried in their racks are separated in a perfectly reliable manner from the indelible marking fluid carried in the containers provided for this purpose.

The fluid used for marking the bills and notes in an indelible manner, is preferably a liquid, having a dye or corrosive action on the valuables to be conveyed.

Numerous modifications and additions may be brought to the above-disclosed portable safety case without widening the scope of the invention as defined in the accompanying claims. Said invention may in fact be readily understood from the reading of the embodiments and modifications thereof, which have been described hereinabove by way of example in a non-limiting sense. In particular, it is possible to provide further modifications wherein any number of racks and containers are arranged in any desired relative positions and are movable with reference to one another through a translational movement, each rack carrying on one of its surfaces facing a container at least one member, such as a sharp tooth for instance, adapted during the relative movement between the rack and the cooperating container, to tear a yielding diaphragm closing at least one opening in the corresponding wall of the container, said yielding diaphragm forming if required at least one wall of said container.

Of course, the case 1 may be given any suitable shape and may be rigid, semi-rigid or yielding. It may be provided with openings of any type, with covers such as 2, doors such as 84 (Figs. 6 and 8) or else with pivoting panels, removable or otherwise, which are associated with any desired closing mechanism.

WHAT I CLAIM IS:—

1. A portable safety case for the conveyance of valuables such as paper securities, bank-notes or the like, said case including at least one compartment containing a rack for locating valuables to be conveyed, at least one further compartment for containing marking fluid having a corrosive or dye action on said valuable, controllable transfer channel means for interconnecting said compartments, and energy storing means operable *via* a control mechanism to eject said fluid under pressure through said controllable transfer channel means and into said rack compartment in a manner such that ejected fluid will flow at least partially over substantially all said valuables.

2. A portable safety case as claimed in claim 1, wherein at least a part of a wall or walls defining the marking fluid compartment is of a comparatively rigid nature.

3. A portable safety case as claimed in claim 1 or claim 2, wherein at least a part

of a wall or walls defining the marking fluid compartment is of a yielding nature.

4. A portable safety case as claimed in claim 2 or claim 3, wherein the energy-storing means includes at least one chamber containing a medium under pressure and provided with a nozzle including a inner valve for controlling the passage of said medium under pressure out of said chamber, said chamber being locatable inside a carrying handle provided on said case.

5. A portable safety case as claimed in claim 2 or claim 3, wherein the energy-storing means includes at least one elastic member or spring.

6. A portable safety case as claimed in any one of claims 1 to 5, wherein the controllable transfer channel means is arranged to open automatically in response to the action of pressurised marking fluid.

7. A portable safety case as claimed in any of claims 1 to 6 wherein the controllable transfer channel means includes at least one port provided in a wall of the marking fluid compartment for closure by a stopper adapted to be displaced from the port by the pressurised marking fluid.

8. A portable safety case as claimed in claim 7 wherein the port is formed by an outwardly flaring pipe having a throttled section, the stopper is adapted to fit in said throttled section of the pipe and apertures are provided in the bottom and/or side walls of the rack compartment for the inflow of the ejected marking fluid.

9. A portable safety case as claimed in claim 4, wherein the energy storing means further includes at least one pipe connecting the chamber carrying the medium under pressure with the marking fluid compartment.

10. A portable safety case as claimed in claim 4 wherein the energy storing means further includes a distribution and expansion system for carrying the medium under pressure from said chamber to the marking fluid compartment.

11. A portable safety case as claimed in claim 3 wherein the marking fluid compartment is made collapsible and wherein the energy storing means is actuatable to displace a movable wall to crush the marking fluid compartment against a stationary wall.

12. A portable safety case as claimed in claim 4 wherein the marking fluid compartment is made collapsible, and wherein a cylinder of a piston and cylinder assembly is connected with the chamber carrying the medium under pressure via a pressure medium distribution and expansion system, so that on actuation of the energy storing means relative movement between the piston and the cylinder is transmitted to at least one movable wall so as to displace the movable wall to crush said marking fluid compartment against a relatively fixed wall in order

to pressurise the marking fluid carried inside said marking fluid compartment.

13. A portable safety case as claimed in claim 5 wherein the energy storing means is operative to cause relative movement between the rack and the marking fluid compartment so as to cause the rack to engage and crush said marking fluid compartment.

14. A portable safety case as claimed in claim 5 wherein at least one of the walls defining the marking fluid compartment incorporates a breakable diaphragm, and the energy-storing means is operative relatively to displace said rack and diaphragm so that the rack breaks open the diaphragm and enters the marking fluid compartment through the broken diaphragm forcibly to drive the marking fluid from said compartment into the rack compartment.

15. A portable safety case as claimed in claim 13 wherein the marking fluid compartment is collapsible and the rack carries a cutting member arranged to tear open a wall of the marking fluid compartment.

16. A portable safety case as claimed in claim 14, wherein the rack is located above the diaphragm of the marking fluid container and the bottom of the rack is provided with sharp teeth for tearing open said diaphragm, said rack being adapted to slide vertically inside the case so as to engage the marking fluid compartment diaphragm.

17. A portable safety case as claimed in any one of claims 13 to 16, wherein slideway and/or ball-bearing guides are arranged to carry the rack or marking fluid compartment in the case.

18. A portable safety case as claimed in claim 4, wherein the pressure medium chamber is slidably carried in the carrying handle of the case and held in position by

locking means against the action of an elastic member, and the control mechanism includes an outer control member which is adapted to release said locking means in a manner such that the nozzle of the chamber is caused to engage a hollow pipe end piece in a manner such that the valve is opened, said pipe end-piece being fitted on a stationary pipe which is arranged for communication with the marking fluid compartment.

19. A portable safety case as claimed in any one of claims 13 to 17, wherein the control mechanism includes jaw parts pivotally secured to each other, adapted to engage a projecting pin rigid with the rack and urged elastically towards an open position, said jaw parts engaging said projecting pin under the action of a locking member and being set free by a control member so as to allow the rack to move towards the marking fluid compartment under the action of the energy thus released.

20. A portable safety case as claimed in any one of the preceding claims wherein the control mechanism includes a removable release pin arranged so that removal of the pin from the control mechanism causes the energy-storage means to operate to eject said marking fluid.

21. A portable safety case substantially as hereinbefore described with reference to Figure 1, Figure 1 as modified by Figures 2 to 5, Figure 6, or Figure 6 as modified by Figures 7 to 11 of the accompanying drawings.

HASELTINE, LAKE & CO.,
Chartered Patent Agents,
28, Southampton Buildings,
Chancery Lane,
London, W.C.2.
Agents for the Applicant.



